Amendments similar to the above proposed claim amendments to the independent claims 1, 6, and 30 were proposed during the interview, although further limitations from dependent claims have been added to these claims by the present amendment. During the interview, Applicant's Attorney pointed out the areas of novelty in the claims, the specific distinctions between the prior art of record and the claims, and the water savings advantage of the present invention.

While no agreement was reached on any of the claims, the Examiners agreed to reconsider the rejections upon receipt of a written response presenting the same information and arguments. The following argument includes the arguments presented during the interview. Applicant's Attorney is appreciative of the time and courtesy of the Examiners.

REMARKS

1. The Office Action:

In the outstanding Office Action, all of the claims pending were again rejected under the judicially created doctrine of obviousness-type double patenting over claims of co-pending patent application serial number 07/815,784. Upon

the receipt of a notification of allowance of claims in both of these these patent applications, Applicant's Attorney will file an appropriate Terminal Disclaimer in the later to issue of these two applications.

All of the claims in the present application stand finally rejected in the above-referenced application as being obvious under 35 USC § 103 over Hoffman in view of Brenner and Syles. The rejection under 35 USC §102 over Hoffman in the first Office Action has been withdrawn.

The Examiner is respectfully requested to withdraw this rejection in view of the amendments presented above and the arguments presented below.

2. Explanation of Amendments:

By the above amendment, claims 1, 6, 15, 17, 18, 19, 22, 23, 25, 26, 27, 28, 30 , 32, 33, 34, 36, 37, and 38 remain pending. Independent claims 1, 6, and 30 have been amended to incorporate some limitations of newly canceled claims 4, 5, 14 and 16; 21 and 24; and 31 and 35, respectively and claim 27 has been placed in independent form by incorporating therein the limitations of claims 21 and 6 on which it previously depended. Each of claims 15, 17, 18, 19, 22, 23, 25, 26, and 28 have been

amended only as to dependency as a result of the changes made to the independent claims. New claims 39, 40, and 41 add independent claims dependent on claims 6, 27, and 30, respectively, that have limitations similar to prior dependent claim 5 and should therefore raise no new issues.

These amendments are believed to place the application in a better condition for allowance or appeal and, if an appeal is required, will reduce the number of issues for appeal due to the substantial reduction in the number of claims.

3. The Claimed Invention:

The present invention is directed to a novel method of rinsing clothes in a horizontal axis automatic washer which can be used with any wash cycle but has particular utility following a wash cycle having a highly concentrated detergent solution. The new rinse method provides a suitable combination of rinsing water and mechanical energy to be effective in removing highly concentrated detergent solution from a load of clothes while avoiding redeposition of removed dirt onto the clothes load. In particular, the rinse method of the present invention is intended to minimize the amount of water and mechanical energy used as well as limiting the duration of the rinse cycle. In the present invention, as claimed in all of

the claims now pending, the clothes are rinsed using a predetermined number of recirculating spray tumble steps, each followed by a drain step. In the preferred embodiment, as claimed in some of the claims, including newly independent claim 27, there are between 6 and 12 of such steps.

As claimed in Independent claims 1 and 6, fresh water and then recirculated rinse liquor is sprayed directly onto the fabric while the fabric is tumbling and then the water is drained. Fresh water is then added and then the steps are repeated a predetermined number of times. It is respectfully submitted that none of the prior art references suggest this novel concept of multiple recirculation steps, punctuated by periodic drain and refill steps.

As claimed in Independent claim 30 and in dependent claims 17 and 25, the initial spraying preferably occurs at a tumble speed, but at least part of the recirculation spray preferably occurs at a higher, or spin, speed in excess of one gravity (1g). None of the prior art references suggest this novel concept of spraying fresh water directly on the clothes at a tumble speed and then spraying recirculated rinse liquor directly on the clothes at a spin speed.

As claimed in claim 1, the drain steps preferably occur at a speed in excess of one gravity (1g). While it is known to drain wash or rinse liquor at a spin speed, none of the prior art references suggests thoroughly draining the rinse liquor at a spin speed and then slowing down to a tumble speed for a further spray rinse cycle.

In addition to these claims, additional novelty is claimed in claims 15, 22, 27, 32, and 37 which claim an optimized number of repetitions of the rinse and drain steps, which is nowhere suggested in the prior art. Still more novelty is found in claims 18, 26, 36, and 37 which provide for only one gallon of water in each rinsing step. The water savings advantage of these parameters is discussed in the specification on page 17, wherein the Applicant explains that the use of six to twelve cycles using one gallon of water each can be favorably compared to the conventional three to five cycles using four to five gallons each which is required by deep tumble rinses. None of the prior art references suggests using such a small amount of water for rinsing a load of clothes.

Applicant's Attorney respectfully submits that Applicant has achieved an unexpected result of providing a rinse cycle that permits the use of a significantly smaller amount of water as a result of the use of novel efficient recirculated spray tumble steps and is therefore entitled to allowance of the claims now presented which are directed to those steps.

4. The Hoffman Reference Does Not Obviate the Claims:

Hoffman teaches a horizontal axis fabric wash system using a low speed tumble wash cycle and a low speed tumble rinse cycle. Fresh water is sprayed onto the clothes during a rinse cycle.

Hoffman nowhere suggests that rinse water should be recirculated, required by all of the claims now pending, let alone that there be a predetermined number of recirculation stages punctuated by drain stages, as required by all of the claims now pending. Clearly, then, Hoffman can not suggest the the specific number of recirculation steps claimed in several of the claims nor the spraying of fresh water at a tumble speed and the spraying of recirculated water at a tumble speed, as claimed in some of the claims.

Hoffman nowhere suggests using the small amount of water which is made possible by the present invention.

Hoffman, at least when viewed alone, cannot therefore obviate any of the claims of the present application.

5. Brenner adds nothing to the teachings of Hoffman:

Brenner teaches a wash method using a vertical axis washer having an agitator reciprocably mounted in a rotatable basket. In Brenner, the basket full of clothes are spun at high speed such as to maintain the clothes on the peripheral wall of the basket, while concentrated wash liquor is sprayed at and through the clothes. In a second step, the basket is no longer spun and the wash liquor is diluted. The clothes are agitated in a pool of diluted wash liquor, and no additional spraying occurs.

Brenner was cited for its teachings of a spray rinse cycle. It is respectfully submitted, however, that Brenner has no teachings pertinent to Hoffman about a rinse cycle for a horizontal axis and, furthermore, nowhere teaches or suggests recirculation of rinse water.

Brenner merely states that a "spray rinse cycle" may be used, but does not say what that spray rinse cycle would look like. One of ordinary skill in the art would find it obvious from Brenner to use known rinse cycles with a Brenner wash cycle, but would learn nothing new about the characteristics of such a cycle from the statement in Brenner. For example, does Brenner teach a spin, tumble or agitate spray rinse? Is water recirculated? The disclosure is silent on these and most other important factors.

Specifically, Brenner nowhere suggests any of the following elements required by one or more of the claims pending in the present application:

Spraying rinse water on tumbling clothes.

Recirculating rinse water, and more particularly, spraying recirculated rinse water onto clothes.

Having more than one recirculation steps punctuated by drain steps, let alone any specific number of such steps.

Spraying of fresh water at a tumble speed and the spraying of recirculated water at a spin speed.

Rinsing with 6 to 12 gallons of water, let alone any specific amount of water.

The claims are clearly novel and unobvious over Brenner and Brenner adds nothing to the teachings of Hoffman which is relevant to the claims in the present invention. Withdrawal of this reference is therefore respectfully requested.

6. Adding Syles Still Does Not Obviate the Claims:

Applicant's Attorney has reviewed the teachings of the Syles reference in view of the Examiner's statements in the two Office Actions and withdraws statements previously made about the reference, which are now believed to be incorrect. Applicant's Attorney did not intend to mislead the Examiner about this reference and apologizes for any confusion caused by the unintentional misdescription of Syles.

Syles teaches a horizontal axis wash system recirculating the rinse liquid during the rinsing cycle while tumbling the fabric within the rotating wash basket. Wash liquor pools below the rotating drum and is recirculated into the drum. Syles suggests spraying fresh water onto the fabric during the rinse cycle, and then recirculating such rinse water. Syles teaches that the entire rinse cycle consists of a single fill followed by recirculation, with all occurring at tumble speed. At the end of the cycle, the clothes are then spun at high speed to extract the rinse fluid. Syles specifically teaches spraying rinse water into the clothes before all of the wash water has completely drained.

Syles nowhere suggests any of the following elements (which are also absent from Hoffman and Brenner for the reasons stated above) required by one or more of the claims pending in the present application:

Having more than one recirculation step punctuated by drain steps, let alone any specific number of such steps.

Spraying of fresh water at a tumble speed and the spraying of recirculated water at a spin speed.

Rinsing with 6 to 12 total gallons of water, let alone any specific amount of water.

The claims are thus novel and unobvious over Syles or over any combination of Syles, Hoffman and Brenner.

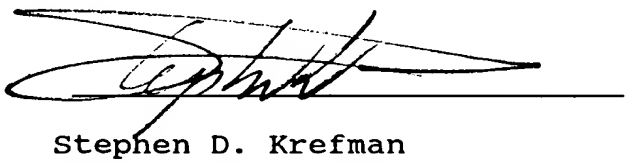
7. Conclusions:

None of the references cited by the Examiner, either taken alone or in any combination suggest the novel process of the present invention and, in fact, none of the references even suggest a recognition of the problem which the present invention addresses. Withdrawal of the rejection is therefore respectfully solicited.

In view of the foregoing remarks and amendments, Applicants respectfully submit that all of the claims remaining in the application are now in allowable form and that the application is now in condition for allowance. Applicants request the Examiner to indicate all claims as allowable and to pass the application to issue. In view of the finality of the outstanding Office Action, and the fees required to respond to an advisory action, a duplicate copy of this response is being hand delivered to the Examiner.

The Examiner is requested to contact Applicant's Attorney promptly to initiate a telephonic interview if the present application is not deemed allowable.

Respectfully submitted,



Stephen D. Krefman
Senior Patent Counsel
Registration No. 28,631

DATED: December 4, 1992
WHIRLPOOL CORPORATION
2000 M-63
BENTON HARBOR, MI 49022
TELEPHONE: (616)923-5013